Application/Control No. Applicant(s)/Patent under Index of Claims Reexamination 10/734,297 OHGANE ET AL. Examiner Art Unit Tae H. Yoon 1714 (Through numeral) Cancelled Rejected Non-Elected **Appeal** N Α O Allowed Restricted Interference Objected Date Claim Date Claim Original Original Final Final Final 51 101 52 102

| 1  | 3  |          | <u> </u> | ⊢        | +-                                     | ╄            | +-       | ┵-                      | ╄              | ↓        |         | :                  | 53  | _         |  |                | _        |                    |              | $\perp$       | ::         | :::          |               | 103    |          | <u> </u>   |                   |           | <u> </u> | Ш.              | ш        | ш        | ш  |
|--|----|----------|----------|----------|--|--------------|----------|-------------------------|----------------|----------|---------|--------------------|-----|-----------|--|----------------|----------|--------------------|--------------|---------------|------------|--------------|---------------|--------|----------|--|-------------------|-----------|----------|-----------------|----------|----------|--|
|  | 4  | L        | L        | <u>_</u> |  | 丄            | L        | Ŀ                       | Ш.             |          |         |                    | 5   |           |  |                |          |                    | 1            |               |            |              |               | 104    | Ľ.       |  | _                 |           |          |                 |          |          | Г  |
| 1. 1   | 5  |          | l        |          |  | T            |          | 1                       |                |          |         |                    | 55  |           |  |                |          | Т                  | Т            | П             | 78         |              |               | 105    |          |  |                   |           |          |                 | П        |          | Г  |
|  | 6  | Г        | Γ        | П        |  | Г            | Т        | Т                       | Г              |          |         |                    | 56  |           |  |                |          | 7                  | ┱            |               |            |              |               | 106    |          | Т  |                   |           |          | $\vdash$        |          |          | T  |
|  | 7  |          |          |          | 1                                      | 1            | 1        |                         | 1              | Г        |         |                    | 57  |           |  | $\Box$         | _        | $\neg$             | 1            | $\vdash$      | -11        |              |               | 107    | <u></u>  | ┪  | $\vdash$          | $\vdash$  |          |                 | Н        |          | <del>                                     </del> |
|  | 8  | 1        | _        | Г        | $t^{-}$                                | †            | $\top$   | +                       | †              |          |         |                    | 58  |           | $\vdash$   | -              | 寸        | -                  | +            | $\vdash$      |            |              |               | 108    |          | <del>                                     </del> | $\vdash$          | -         | ⊢        | ┼               | Н        | _        | ⊢  |
| <del>                                     </del> | 9  | -        |          | ┢        | +-                                     | †            | +        | +-                      | ╁              | t        |         | $\vdash$           | 59  | H         | Н  | $\vdash$       | +        | +                  | +-           | $\vdash$      |            |              |               | 109    | ┢        | ⊢  | ⊢                 | ⊦         | ╁        | -               | $\vdash$ | -        | ╂─   |
|  | 10 | $\vdash$ | -        | ⊢        | ╁                                      | ╁            | +        | 1                       | ╫              | ╁        |         | -                  | 60  | ┝┈        | Н  | $\dashv$       | $\dashv$ | +                  | +-           | ╌┼            | -4::       |              | -+            | 110    | ┝        | ⊢  | ┢                 | ├         | ⊢        | ├               | $\vdash$ | $\vdash$ | ┼  |
| -  | 11 |          | Н        | ⊢        | ╁                                      | ╁            | +        | ╁                       | +-             | -        |         | $\vdash$           | 61  | ┝         | ╁┈┤  | -              | $\dashv$ | +                  | +-           | $\vdash$      | -48        |              |               | 110    | ⊢        | -  | ⊢                 | ₩'        | ⊢        | ₩               | ⊢⊣       | <u> </u> | ₩  |
| $\vdash$   | 12 | H        | ⊢        | -        | ╫                                      | ╀            | ╁        | ╁                       | +              | -        |         | $\vdash$           |     | ⊢         | $\vdash$   | -              | _        | +                  | +            | ┡             | -4‼        |              |               | 111    | -        | ┡-   | ሥ                 | ╙         | ⊢        | <b> </b>        | -        | $\vdash$ | ⊢  |
| -  | 12 | ├        | -        | ⊢        | ┿                                      | ⊢            | +-       | ╂                       | ₩              | I        |         | <u> </u>           | 62  | <u> </u>  | -  |                | -        | -                  |              |               |            |              |               | 112    | _        | ╙  | ╙                 | <b></b>   | <u> </u> | igspace         |          | ш        | ⇊  |
| <b></b>  | 13 | -        | <u> </u> | ┡        | 4-                                     | ╄            | ╄        | ╄-                      | -              | <u> </u> |         |                    | 63  | L         | Ш  | $\perp$        | _        | 4                  |              | $\sqcup$      | ∷          |              |               | 113    | _        | L.   | Ш                 | _         | L        |                 | Ш        | ш        | 辶  |
| $\vdash$   | 14 |          | _        | _        | ╄                                      | ╄            | ╄        | ╁                       | ١              | Ш        |         |                    | 64  | _         | ш  |                | _        | _                  |              | $\sqcup$      | _          |              |               | 114    |          |  |                   |           | L        |                 | Ш        |          | 上  |
| $\vdash$   | 15 |          | L        | <u> </u> | ╙                                      | ╄            | ╄        | ↓_                      | _              | L.,      |         | $ldsymbol{\sqcup}$ | 65  |           | Ш  |                | _        | _                  |              | Ш             |            |              |               | 115    |          |  |                   |           | 乚        | $\Box$          | Ш        |          | 丄  |
|  | 16 |          |          |          | ↓_                                     | ↓_           | 丄        | ↓_                      |                |          |         |                    | 66  |           | Ш  |                |          | $oldsymbol{\perp}$ |              |               | ]::        |              |               | 116    |          |  |                   |           |          |                 |          |          |  |
|  | 17 |          |          |          |  | L            |          | 1                       | L              |          |         |                    | 67  |           | ΙI   | i              |          | - 1                |              |               |            |              |               | 117    |          |  |                   | $\Box$    |          |                 |          |          |  |
|  | 18 |          |          |          |  | Ĺ            | oxdot    |                         |                |          |         |                    | 68  |           | П  |                | T        | Т                  | Т            | П             | 7          |              |               | 118    |          |  |                   |           | П        |                 | П        | П        | Г  |
|  | 19 |          |          |          |  |              | Π        |                         | Г              |          |         |                    | 69  |           | П  |                |          | T                  | $\top$       |               |            | :::          |               | 119    | П        |  | П                 | П         | Г        | П               | $\sqcap$ |          | Г  |
|  | 20 |          |          |          | Г                                      |              | T        | Т                       | Т              | П        |         |                    | 70  |           | М  | 7              | _        | $\top$             | $\top$       | $\Box$        |            | ı            | $\neg$        | 120    |          | $\vdash$   | П                 | М         | г        | П               |          |          | Н  |
|  | 21 |          |          |          | T                                      | П            | 1        |                         | T              | П        |         |                    | 71  |           | П  | $\dashv$       | $\dashv$ | 十                  | +            | $\vdash$      |            | ı            | $\dashv$      | 121    | $\vdash$ | $\vdash$   | Н                 | Н         | М        | Н               | $\vdash$ | _        | 一  |
|  | 22 |          |          |          | 1                                      | 1            | 1        | 1                       | ✝              | Н        |         |                    | 72  |           | H  | 寸              | +        | +                  | +            | $\vdash$      | -18        | ı            |               | 122    |          | -  | Н                 | Н         | ⊢        | H               | $\vdash$ |          | $\vdash$   |
|  | 23 |          | _        | _        | 1                                      | ╁╴           | t        | t                       | ┼┈             | H        |         |                    | 73  | _         | Н  | $\dashv$       | +        | -                  | +-           | $\vdash$      | -          | ::I          |               | 123    |          |  | Н                 | $\vdash$  | Н        |                 | $\vdash$ | -        | -  |
| <del>                                     </del> | 24 |          |          | -        | +                                      | ╁            | ╁─       | +                       |                | Н        |         | ╁                  | 74  | _         | <del>                                     </del> |                | +        | -                  |              | $\vdash$      |            | -            | <del></del>   | 124    |          | $\vdash$   | Н                 | $\vdash$  | Н        | $\vdash$        | $\vdash$ | $\vdash$ | ├  |
| <del></del>                                      | 25 | -        |          | _        | ╁                                      | ╂            | ╁        | ╁                       | Н              | Н        |         | $\vdash$           | 75  | _         | Н  | $\rightarrow$  | $\dashv$ | -+                 | +-           | -             |            | ŀ            | $\rightarrow$ | 124    |          |  | Н                 |           | -        | Н               |          | -        | ┝  |
| 1  | 26 | -        | $\vdash$ |          | ⊢                                      | ╀╌           | ┼—       |                         | ╌              | Н        |         |                    |     | _         | Н  | -              | -        | -+-                | -            | _             |            | 1            |               | 125    |          | _  |                   | $\square$ | $\vdash$ | <b>  </b>       |          | _        | ╙  |
|  |    |          |          |          | ┼                                      | ⊢            | ╄        | ₩                       | ⊢              | Щ        |         |                    | 76  |           |  | _              | 4        | -                  | $\perp$      | _             | -4:::      |              | -             | 126    |          | Щ  | Ш                 | Ш         |          | Ш               |          |          | ш  |
|  | 27 | _        |          |          | ╀                                      | ļ            | ╄        | ╙                       | L              | Ш        |         | $\vdash$           | 77  |           | Ш  | _              | _        | _                  |              |               | _ :::      | L            |               | 127    |          |  | Ш                 | ш         | Ш        | Ш               | Ш        |          | _  |
| $\vdash \vdash$                                  | 28 |          |          |          | ــــــــــــــــــــــــــــــــــــــ | <u> </u>     | <u> </u> | 1                       | Щ              | Ш        |         |                    | 78  |           | Ш  | _              |          | _                  |              |               | _]:::      | L            |               | 128    |          |  |                   |           |          |                 | Ш        |          |  |
|  | 29 |          |          |          | ↓_                                     | L_           | _        |                         |                |          |         |                    | 79  |           |  |                |          |                    |              |               | _]:::      | ::L          |               | 129    |          |  |                   |           |          |                 | ı. T     |          |  |
|  | 30 | _        |          |          | L                                      |              |          | $\perp$                 |                | Ш        |         |                    | 80  |           |  |                | $\Box$   |                    |              |               |            | [            |               | 130    |          |  |                   |           |          |                 |          |          |  |
|  | 31 |          |          |          |  |              |          |                         |                |          |         |                    | 81  |           | П  | П              | П        | Т                  | T            |               | 7#         |              |               | 131    |          |  | П                 |           | П        | $\Box$          |          |          |  |
|  | 32 |          |          |          | Γ                                      |              | П        |                         |                |          |         |                    | 82  |           |  |                |          | 7                  |              |               | 78         | ı            |               | 132    |          |  | $\Box$            | $\Box$    | $\Box$   | П               | $\Box$   | $\neg$   |  |
|  | 33 |          |          |          | Γ                                      | Γ            | Г        |                         |                |          |         |                    | 83  |           |  |                | 丁        | $\neg$             |              |               | 78         | ı            |               | 133    |          |  |                   | $\Box$    |          | П               | $\Box$   |          | П  |
|  | 34 |          | П        |          |  |              | Г        | П                       | П              |          |         |                    | 84  |           |  |                | $\neg$   |                    | 1            |               | 78         | ıt           |               | 134    | $\neg$   | _  |                   | _         | П        | М               | $\neg$   | $\neg$   | $\vdash$   |
| $\Box$   | 35 |          | $\neg$   |          |  |              | Т        | П                       | П              |          |         |                    | 85  | _         |  | $\neg$         | _        | $\dashv$           | 1            | _             | -{:::      | H            |               | 135    |          |  | $\vdash$          | $\dashv$  | -        | <del></del>     |          | ᅥ        | $\vdash$   |
| $\vdash$   | 36 | 寸        | _        |          | 1                                      | _            |          | H                       | Н              |          |         |                    | 86  | _         |  | +              | -        | +                  | +            | -             | -1111      | ⊪            |               | 136    | -        |  | $\vdash$          | $\dashv$  | -        | $\vdash$        | -        |          | Н  |
| <del></del>                                      | 37 | -        | $\dashv$ |          | $\vdash$                               | tт           | ┪        | $\dagger \lnot \dagger$ | Н              | ᅱ        |         | $\vdash \vdash$    | 87  | -         | $\vdash$   | -+             | $\dashv$ | +                  | +            | -+            | -          | ₽            | <del></del>   | 137    | $\dashv$ | -  |                   | $\dashv$  | $\vdash$ | $\vdash\vdash$  | -        |          | Н  |
|  | 38 | -        | -        | _        |  |              | $\vdash$ | <del>   </del>          | $\vdash$       | $\dashv$ |         |                    | 88  | 一         | $\dashv$   | +              | +        | +                  | +-           | -+-           |            | ₽            | $\dashv$      | 138    | $\dashv$ | $\dashv$   |                   |           | $\dashv$ | $\vdash \vdash$ | $\dashv$ | $\dashv$ | $\vdash$   |
|  | 39 | -        | -        |          | -                                      | H            | $\vdash$ | H                       | Н              | -        |         | ┝╌┤                | 89  |           | -  | $\dashv$       | ┰        | +                  | +            | ┵             | -1         | ⊪            |               | 130    |          | $\dashv$   | $\dashv$          | -         | $\dashv$ | $\vdash \vdash$ | $\dashv$ | $\dashv$ | $\vdash$   |
|  | 40 | $\dashv$ | +        | _        | -                                      | <del> </del> | -        | H                       | $\vdash\vdash$ | -1       |         | ├─┤                | 90  | -         | -+   | -              | +        | +                  | +            | -+            | -          | ŀ            |               | 139    |          |  |                   |           | _        | Н               | -        | _        | ┉  |
| <del>  </del>                                    | 41 | ┥        | $\dashv$ |          | -                                      | -            | ⊢        | $\vdash$                | $\dashv$       | -        |         | $\vdash$           |     |           | $\dashv$   | +              | +        | +                  | +            | -+            | - !!!      | ŀ            |               | 140    | _        |  | _                 | ᅴ         | $\dashv$ | Н               | _        | ᆜ        | $\vdash$   |
|  |    | $\dashv$ | -+       |          | $\vdash$                               | $\vdash$     |          | ┝╌┤                     | $\vdash$       |          |         |                    | 91  | _         | -  | 4              | 4        | 4                  | ┦┤           | +             | - :::      | ::  <b>-</b> |               | 141    | _        | _  | _                 | _         | _        | Ш               | _        | _        | Щ  |
| $\vdash$   | 42 | -4       | -        |          | $\vdash$                               | <b>—</b>     | <u> </u> | $\sqcup$                | $\sqcup$       | _        |         | -                  | 92  | -4        | _  | 4              | 4        | 4                  | 4-4          |               | 4          | il.          |               | 142    | ᆚ        | _]   |                   |           |          | Ш               |          | [        |  |
| <b></b> -  | 43 | 4        | 4        | _        | $\vdash$                               | <u> </u>     | <u> </u> | ⊢⊢                      | $\sqcup$       | _        |         |                    | 93  |           | 4  | 4              | 4        | ┸                  | igspace      | $\bot$        | _          | L            |               | 143    |          |  |                   |           |          | Ш               |          |          |  |
|  | 44 | -        |          |          | Ш                                      | <u> </u>     | <b>L</b> | ⊢                       | Ц              | _        |         |                    | 94  | _         | _  | $\perp$        | 4        | $\perp$            | 1.1          | $\bot$        | <b>∐</b> ∭ | ĽL           |               | 144    | $\Box$   | $\Box$   | $oldsymbol{\bot}$ | $\Box$    | $\Box$   |                 |          |          |  |
|  | 45 | _        | 4        |          | ЬJ                                     |              |          | Ш                       | Ш              |          |         |                    | 95  | _         |  | $\perp$        |          | $\perp$            | $oxed{oxed}$ |               |            | L            | $\Box$        | 145    | $\Box$   |  |                   |           | _]       |                 | $\Box$   |          |  |
|  | 46 | _        | _        |          | Ш                                      |              |          | Ш                       | Ш              |          | Шl      |                    | 96  | $_{ m J}$ |  | $\perp \Gamma$ | ╝        |                    | $\perp$      | $\Box \Gamma$ |            |              |               | 146    |          |  |                   |           | ╗        | ╗               | 丁        | П        | П  |
|  | 47 | $\perp$  |          |          |  |              |          |                         |                |          |         | T                  | 97  |           |  | T              | T        | Ι                  | $\Box$       | T             | 7          | ľ            |               | 147    | 寸        | T  | ヿ                 | ヿ         | ╗        | $\neg$          | 寸        | $\neg$   | $\exists$  |
|  | 48 |          |          |          |  |              |          |                         |                |          |         |                    | 98  | 乛         | T  | Т              | Т        | Т                  | $\Box$       |               | 7          |              | -             | 148    | ┪        | ┪  | ヿ                 | $\dashv$  | ヿ        | _               | $\dashv$ | 7        | $\dashv$   |
|  | 49 | _T       |          |          |  |              |          |                         | $\neg$         | _        |         |                    | 99  | 7         | $\dashv$   | $\top$         | $\top$   | 丅                  | $\top$       | _             | ٦∭         | ۲            |               | 149    | ┪        | -  | 十                 | 十         | 寸        | 7               | 十        | 7        | ⊣  |
|  | 50 | 寸        | 1        |          |  |              |          | $\Box$                  | ヿ              | $\neg$   | <b></b> |                    | 100 | 7         | _  |                | +        | $\top$             | 1-1          |               | ۱!!!       | ۲            | -             | 150    | +        | -†   | 7                 | $\dashv$  | $\dashv$ | $\dashv$        | 十        | 十        | $\dashv$   |
|  |    |          |          |          |  |              |          |                         |                |          |         |                    |     |           |  |                |          |                    | •            |               | ٠٠٠٠       |              |               | . ~~ 1 |          | _  |                   | _         |          |                 |          | _        |  |